



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.            | CONFIRMATION NO. |
|--|-------------|----------------------|--------------------------------|------------------|
| 10/811,023   | 03/26/2004  | Norio Matsumoto      | 4415-0024                      | 9819             |
| 35301 7590 02/12/2007<br>MCCORMICK, PAULDING & HUBER LLP<br>CITY PLACE II<br>185 ASYLUM STREET<br>HARTFORD, CT 06103 |             |                      | EXAMINER<br>STAICOVICI, STEFAN |                  |
|  |             |                      | ART UNIT<br>1732               | PAPER NUMBER     |
| SHORTENED STATUTORY PERIOD OF RESPONSE   |             |                      | MAIL DATE                      | DELIVERY MODE    |
| 3 MONTHS   |             |                      | 02/12/2007                     | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/811,023

Applicant(s)

MATSUMOTO ET AL.

Examiner

Stefan Staicovici

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 6-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. Applicants' response filed December 11, 2006 has been entered. Claims 1-16 are pending in the instant application.

### *Election/Restrictions*

2. This application contains claims 6-16 drawn to a non-elected invention without traverse in the response filed March 27, 2006.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy *et al.* (US Patent No. 6,352,662 B1) in view of Blackinton, Jr. (US Patent No. 6,299,810 B1).

Murphy *et al.* ('662) teach the basic claimed process for making a hollow fiber reinforced article including, providing a mandrel (50), wrapping said mandrel (50) with a bladder, wrapping said bladder with a plurality of fiber reinforced pre-preg plies (60,62) to form a wrapped assembly, placing said wrapped assembly in a mold (forming die), heating and pressurizing said

pre-preg plies by introducing a pressurized gas through said mandrel, and curing said pre-preg plies to thereby form said hollow fiber reinforced article (see col. 5, lines 21-58).

Regarding claim 1, Murphy *et al.* ('662) does not teach applying a vacuum in a vacuum chamber such that said plurality of fiber-reinforced pre-preg plies do not contact said mold. Blackinton, Jr. ('810) teaches a process for molding a fiber reinforced article including, providing a mandrel, a vacuum chamber and a pressing die (forming die), wrapping a plurality of pre-preg fibers about said mandrel to form an assembly, placing said assembly in a vacuum bag, drawing a vacuum onto said vacuum bag and said vacuum chamber such that the bag is kept off the fibers (composite body and forming die do not contact each other), collapsing said vacuum bag and, applying heat and pressure using said pressing die (clamping said forming die) to form said fiber reinforced article (see col. 4, line 38 through col. 5, line 9). Therefore, it would have been obvious for one of ordinary skill in the art to provide the vacuum bag and chamber to thereby apply a vacuum such that the bag is kept off the fibers as taught by Blackinton, Jr. ('810) in the process of Murphy *et al.* ('662) because Blackinton, Jr. ('810) specifically teaches that such a process allows for the removal of air bubbles from within the pre-preg material (see col. 4, lines 53-54), hence providing for reduced porosity and as such, providing for an improved product.

In regard to claim 2, Murphy *et al.* ('662) teach providing a mandrel (50), wrapping said mandrel (50) with a bladder and wrapping said bladder with a plurality of fiber reinforced pre-preg plies (60,62) to form a wrapped assembly (see col. 5, lines 21-58).

Specifically regarding claim 3, Murphy et al. ('662) teach heating and pressurizing said pre-preg plies by introducing a pressurized gas through said mandrel to thereby cure and form said hollow fiber reinforced article (see col. 5, lines 21-58).

Regarding claims 4 and 5, Murphy et al. ('662) teach removing said mandrel (50) after wrapping said plurality of fiber reinforced pre-preg plies (60,62) and connecting a source of pressurized gas (52) directly to said bladder (see col. 5, lines 39-42 and Figure 3). It is submitted that said pressurized gas source (52), as shown in Figure 5, includes a mouth-piece in order to connect directly to said bladder.

#### ***Response to Arguments***

5. Applicant's arguments filed December 11, 2006 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Staicovici, Ph.D. whose telephone number is (571) 272-1208. The examiner can normally be reached on Monday-Friday 9:30 AM to 6:00 PM.

Art Unit: 1732

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson, can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stefan Staicovici, PhD

  
Primary Examiner 2/7/07

AU 1732

February 7, 2007